



Ash Grove Branford Plant

Portland Cement Type IL (13)

Silos: 2, 3, 4, 5

February 2023 Mill Certificate

Production Period : 2/1/2023 To 2/28/2023

STANDARD REQUIREMENTS

Chemical Data			Physical Data		
Item	Spec. Limit	Results	Item	Spec. Limit	Results
SiO ₂ (%)	A	17.8	Air Content of mortar (volume %)	12 max	2
Al ₂ O ₃ (%)	A	4.5	Blaine fineness (m ² /kg)**	A	512
Fe ₂ O ₃ (%)	A	3.1	Autoclave expansion (%)	-0.20 min/0.80 max	
CaO (%)	A	62.0	Fineness, retained in #325	A	0.8
MgO (%)	A	0.6	Compressive strength (MPa/[psi]):		
SO ₃ (%)*	3.0 max	2.8	1 day		15.8 [2290]
Loss of ignition (%)	10.0 max	7.2	3 days	13.0[1890] min	30 [4350]
Na ₂ O (%)	A	0.15	7 days	20.0[2900] min	38.4 [5570]
K ₂ O (%)	A	0.18	28 days (previous month)	28.0[4060] min	50.2 [7270]
			Time of setting (minutes)		
CO ₂ (%)	A	5.9	(Vicat) Initial	45 min	96
Limestone (%)	15.0 max	14.3	(Vicat) Final	375 max	215
CaCO ₃ in limestone (%)	70 min	90	Sulfate Resistance (ASTM C1012 180d) (%)	0.10 max	0.05
Inorganic process addition (%)	5.0 max	--	Heat of hydration (ASTM C1702 3d)	B	261
			Mortar Bar Expansion (ASTM C1038) (%)*	0.020 max	0.001

OPTIONAL REQUIREMENTS

Item	Spec. Limit	Results	Item	Spec. Limit	Results
Equiv. Alkalies (%)	0.60 max	0.27	Density (ASTM C188) (g/cm ³)	B	3.03
Chloride (%)	B	0.01			

Additional Data

Type	Limestone	Inorganic Processing Addition
Amount	14.3	--
SiO ₂ (%)	5.3	--
Al ₂ O ₃ (%)	0.6	--
Fe ₂ O ₃ (%)	0.2	--
CaO (%)	51.1	--
SO ₃ (%)	0.7	--

This cement meets ASTM C595 and AASHTO M240 Specification for Type IL (MS) Portland Cement

This cement also meets all applicable FDOT (Facility ID: CMT 29), SCDOT, and NCDOT (Plant ID: CM69) specifications for Type IL cement

*It is permissible to exceed the max value for SO₃ content, provided it is demonstrated by ASTM C1038 that the cement will not develop expansion exceeding 0.020% in 14 Days

A Not applicable.

B Test result represents most recent value and is provided for information only.

C Test result is not yet available

March 6, 2023

Branford Cement Plant

Ash Grove

5117 U.S. Hwy 27

Branford, FL 32008

Tel: (386) 935-5013 - Fax: (386) 935-5080

Zheng Liu

Zheng Liu
Quality Control Manager